U.S. EPA ☺ **RECORD OF COMMUNICATION** ⊗ file: R233

DATE: January 4, 1994

SUBJECT: **Sooner Dial Co. Site, Clinton, OK**

FROM: **Hank May** (6T-ET)

TO: **Jim Mullens**, Chief
Response/Investigation Section (6E-EI)

SUMMARY OF COMMUNICATION:

This follows up on my electronic response 1/3 to your electronic memo of 12/17, regarding the subject site.

I am attaching FYI a copy of all the materials sent to me by Dale McHard. It turns out it has not been 4 or 5 years since he sent me the materials (as I said) but only a little under 3½ years.

Radium-226 (half-life 1600 years) is more hazardous for a considerably longer time than cesium-137 (half-life 30 years). Also, EPA has considerable experience in dealing with radium contamination (Regions 2 and 3).

By comparing the two half-lives you can see that the radium problem is not going to go away due to decay, and it is likely that this contamination problem will resurface again and again until something is done about it.

CONCLUSIONS, ACTION TAKEN OR REQUIRED:

Information only.

9527515

INFORMATION COPIES TO:
☐ Ascenzi (6T-ET) w/o attachments
☐ C. Gazda (6E-E) w/o attachments

000199

RECORD OF COMMUNICATION

☑ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE
☐ OTHER (SPECIFY)

(Record of item checked above)

TO: Dale McHard Ok Health Dept.

FROM: Hank May 6T-ET

DATE 15 AUG. ~~14~~ 1990

TIME a.m.

SUBJECT
Radium - Contaminated Site in Oklahoma

SUMMARY OF COMMUNICATION
I phoned Dale in response to a preliminary inquiry to Emerg. Response Br. (mentioned to me by J. Mullins, 6E-ES). It seems that there is an old site in Clinton, OK, located in a metropolitan area very near a shopping mall and other activity, that once was a plant that refurbished aircraft instruments. Name of the plant was "Sooner Dials" and the plant has been out of operation for 25-30 years. Apparently, the plant refurbished radium-dial instruments, and caused an unknown amount of contamination. The OK Health Dept. visited the site recently and determined that some soil contamination is present, and some excess gamma radiation is present, but no quantitative estimate has been made as to how much contamination is there. (Excavation or core sampling is needed to determine that.)
Dale is sending me some info. out of his files for background.

CONCLUSIONS, ACTION TAKEN OR REQUIRED
Dale thinks the waste generator is probably out of business, and doubts that the present owner will be willing or able to pay for characterization or cleanup.
I think Okla. plans to make a formal request for CERCLA to investigate the site.
I will send Dale info. out of my files on radium-contaminated sites in other Regions that have had CERCLA involvement.

INFORMATION COPIES
TO: D. Ascenzi 6T-ET, C. Gazda 6E-E, J. Mullins 6E-ES

000200

RC 122 (2-84)

Licensee: Sooner Dial Company

Address: 1002 South 10th Street
Clinton, Oklahoma

Radiation Safety Officer

Harold C. Bay.

People Talked to in Course of Inspection

Harold C. Bay and Charles E. Owens, General Manager.

Information about User Organization

This company is engaged in the refinishing of aircraft instrument dials with radioactive and nonradioactive paint. Many of the dials which are returned for refinishing have been painted with radioactive paint in the past. These are opened in the front office by the secretary, transferred to the shop, where they are stored awaiting processing, and the old paint is stripped in a pot containing a solvent. The dial is then refinished using the appropriate paint as required.

Inventory of Radioactive Material

At the time of inspection, there was on hand 3 vials of paint containing approximately 0.3 millicuries of radium each.

Use Made of Material

This radium paint is used in the painting of aircraft instrument dials.

Personnel Monitoring Devices

None.

Personnel Exposures

Personnel exposure could not be determined since no personnel monitoring devices were in use.

Survey Instruments

None.

Survey Procedures

None.

Safety Procedures and Emergency Plan

None.

Leak Testing

Not required since these sources are not sealed.

Storage Facilities

The radium paint is stored in a lead-box underneath a work bench. There are also stored many empty vials which had contained radium paint in the past. These vials are stored underneath a work bench.

Posting

None.

Results of Inspector's Survey

It was found that the work area was grossly contaminated with radium paint. All areas in the shop were contaminated with levels from 7500 to 300,000 counts per minute of alpha radiation as measured with the PAC 1SA. Five wipe samples were taken in areas which were surveyed directly. All of the wipes showed removable contamination from 460 to 42,778 dpm per 100^2 cm. The pot which is used for removing paint from old dials prior to refinishing showed 18 mr per hr at the surface of the pot. The secretary's desk where the mail is opened showed 7500 cpm of alpha contamination as measured with the PAC 1SA. The results of this survey are shown on the attached sketch.

Waste Disposal

Mr. Bay stated that at intervals of approximately 6 months he removed the sludge from the stripping pot, took it to the sanitary landfill, dug a small hole and poured the sludge into the hole. The sanitary landfill operator then covered the material with refuse and dirt to a depth of from 20 to 50 feet. The vials which had contained radioactive material and been emptied were stored underneath the bench in the shop.

Records

None.

Remarks

At the time of the inspection, I made the following recommendations:

1. Dispose of glass bench tops.
2. Strip paint from bench tops and repaint with epoxy paint.
3. Since only a small amount of radium paint is kept on hand at any one time, put the paint in a small lead box for storage.
4. Install a hood for storage of dials awaiting processing and the paint which is on hand.
5. Ship empty bottles and sludge from the strip tank to a commercial disposal firm.
6. Get a film badge service.

7. Post the entrance to the shop with "Caution-Radiation Area" and "Caution-Radioactive Materials."

8. Make a general cleanup and establish a routine cleanup procedure.

9. Obtain some sort of instrumentation which will detect the spills of radioactive material. This instrumentation should be capable of detecting alpha particles, however, it is possible that a black light would enable them to locate any spots of paint. Of course the black light would not enable them to distinguish between radioactive and non-radioactive paint.

Date Inspected: June 23, 1965

Inspecting Officer

R. L. Craig
Oklahoma State Department
of Health

[redacted]

OKLAHOMA STATE DEPARTMENT OF HEALTH
3400 North Eastern
Oklahoma, City, Oklahoma

Registration No. 1
Class G
File SDC

REGISTRATION OF USERS OF RADIATION SOURCES

This form, properly completed and filed with the Oklahoma State Department of Health, constitutes registration of the user of the radiation sources herein named in accordance with regulations adopted by the State Board of Health September 10, 1961 under authority of House Bill 583, Chapter 20, 1959 Session Laws of Oklahoma.

Registration Does Not Imply Approval or Disapproval

FORM B: USERS OF RADIOACTIVE MATERIALS

1. Owner—Name Sooner Dial Co.
   Address 1004 S. 10th, Clinton Oklahoma
2. Person in Charge of Facility—Name Harold C. Bay
   Address Same
3. Confines of Installation Same

4. Radioactive Materials (Use Additional Sheets if Necessary)

Item No.	Sealed	Unsealed	Isotope (1)	Physical Form (2)	Source Strength (3)	Use (4)	Est. Max. Quantity on Hand at Any One Time During Past Two Years (5)
1		✓	Ra^{226}	Solid	0.9 mc	Dial Painting	9 mc
					3 - 1/4 vials of paint containing 0.3 mc each		

Footnotes: (1) For example, Ra^{226}, Co^{60}, I131; (2) Solid, Liquid, or Gas; (3) In Curies; (4) Medical Diagnosis, Therapy, Beta Gauge, Research, Radiography, etc.; (5) Curies or Estimate.

5. Radiation Safety Officer(s)-Name(s); and Statement of Qualifications: Harold C. Bay. 19 yrs. experience as dial painter

6. Date and Signature of Owner or Authorized Agent:
   Date 1-23-65
   Signature Charles E Queen
   Title or Position Held Gen Manager

This Space for Use of Registering Agency Only

7. Acknowledgement of Registration:
   Date Received 6-24-65
   Serial No. 00124
   Signature of Registering Officer:
   Dale McHard

PLEASE MAKE THREE COPIES: Return all three copies to Oklahoma State Department of Health.

DO NOT USE CARBON PAPER.

THIS PAPER IS CHEMICALLY TREATED FOR REPRODUCTION.

000204

REQUEST FOR RADIOACTIVITY ANALYSIS

Submitted by R L C

Samples taken at Sooner Dist C
1002 S 10th
Clinton Okla.

Date submitted 6-24-65

Date collected 6-23-65

Type analysis desired: Gross alpha ✓ Gross beta ✓

Special Gamma Scan 40 min Counting time
Record Spectrum on paper tape & scan

Sample Number	Alpha Net cpm	Beta Net cpm	Gamma Net cpm	Gamma Energy Range
1	13,307	13 819	6115	0.10 to 2.00 mc
2	3,270	482	85	✓
3	1006	1831	251	✓
4	676	1018	66	✓
5	768	1285	242	✓
5th Ra	226 Scan		261	✓
	1813 dpm			

Analyzed by R L C Date analyzed 6-29

Remarks: The gamma spectra of these samples clearly show the radioactivity to be due to Ra^{226} plus daughters.

000205

Commissioner

KIRK T. MOSLEY, M. D.

State Department of Health

State of Oklahoma

3400 NORTH EASTERN
OKLAHOMA CITY, OKLAHOMA 73105

August 31, 1965

MEMORANDUM

To: Dale McHard

From: R. L. Craig

Subject: Use of Radium by Aircraft Dial Refinishing Installations

A review of the information in our files concerning the use of luminous paints containing radium by shops engaged in the refinishing of aircraft instrument dials indicate that all of the installations engaged in similar work probably possess amounts of radium in excess of the exempt quantity. A search should be made to locate these installations and get them registered.

There will be many problems encountered in the inspection of these installations, most important of which are widespread alpha contamination and inadequate disposal practices.

It is common practice for an aircraft owner to send to these people by mail an instrument dial for refinishing which is painted with radium paint. The mail is usually opened by a secretary at her desk and then forwarded to the dial shop. (In at least one instance I have investigated, the secretary was employed by someone other than the dial painting company.) The dials are then transferred to the dial shop where they are stored awaiting processing. This storage is usually on a desk or table and no precautions are taken to prevent the spread of radium or radon. The processing consists of removing the old paint with solvent and repainting the dial either with a brush or by a silk screen process. The paint used is the dry powder type which is mixed with a binder prior to use. The paint removed from the dials settles to the bottom of the pot used for removal and is usually disposed of in a sanitary landfill. I have personally observed this procedure in one shop and, from the results of surveys made by Harry Brighton in Tulsa, assume that it is fairly standard throughout the industry.

Survey results have shown that high levels of widespread alpha contamination exist in these shops, up to 3,000,000 dpm per 100 sq.cm. The gamma exposure rates are not excessive for controlled areas.

A copy of a survey I made at the Sooner Dial Company at Clinton is attached.

Recommendations for corrective actions to be taken by the facility owners are:

1. Clean up existing contamination.

2. Install hoods where dials containing radium may be stored prior to processing.

3. Conduct all processing of radioactive dials in a hood.

4. Cease any silk screening of radioactive paint. This recommendation needs further investigation since it may be the only method by which satisfactory work can be done.

5. Purchase monitoring equipment suitable for alpha detection.

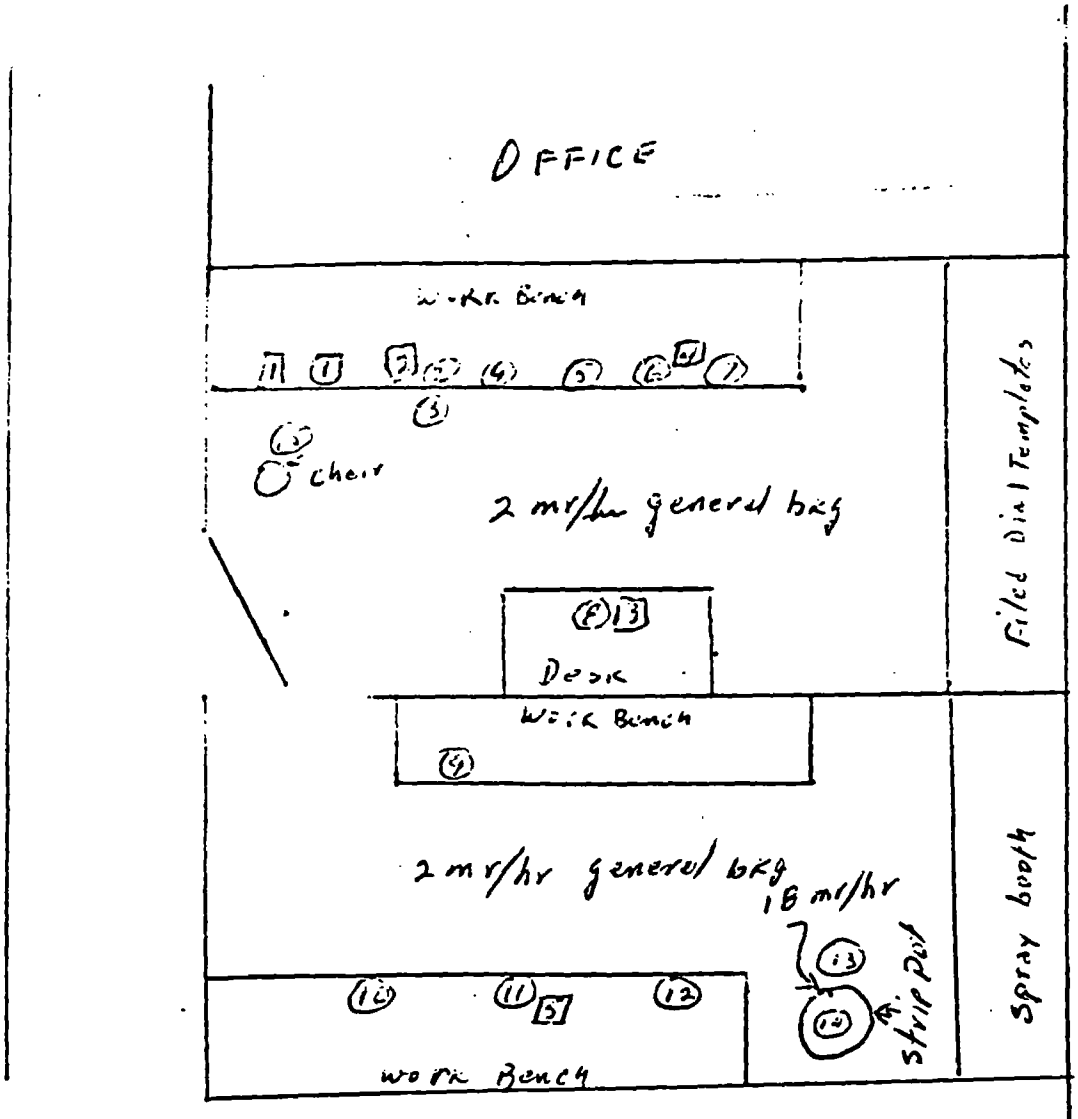
6. Survey work areas routinely.

7. Dispose of radioactive waste through a commercial waste disposal firm.

In addition to the above recommendations, we should encourage the use of some other method of dial illumination, i.e., fluorescence under ultra-violet light, tritium activated paint, or promethium 147 activated paint.

RLC:PL
Attachments

Radioactive Contamination Survey of Sooner Dial Co.



Direct Survey

(1) 250K cpm	(6) 10K	(11) 115K	
(2) 13.5K	(7) 13.5K	(12) 75K	
(3) 50K	(8) 7.5K	(13) 90K	
(4) 300K	(9) 160K	(14) 50K	
(5) 50K	(10) 45K	(15) 1.2K	

Wipes

[1]	42,774 dpm/100cm²
[2]	594
[3]	1756
[4]	460
[5]	1691

000208

6-22-87

Commissioner
A.B.COLYAR, M.D

State Department of Health

State of Oklahoma

3400 NORTH EASTERN
OKLAHOMA CITY, OKLAHOMA 73105

December 20, 1966

MEMORANDUM

To: Dale McHard

From: J. M. Conlon

Subject: Sooner Dial Company, Clinton, Oklahoma

On December 12 and again on December 13, 1966, this writer contacted Mr. Charles E. Owens, General Manager of Sooner Dial Company, to inquire as to the status of the clean-up and initiation of protective measures as recommended by Robert Craig following his inspection of the user's dial refinishing operation on June 23, 1965, and to arrange for a follow-up visit on December 20, 1966.

In the initial conversation, Mr. Owens indicated that the shop areas were being refinished with epoxy resin paints; the use of radium paints had been discontinued in this facility; monitoring of suspected areas in the plant had been performed with a Civil Defense CDV700, before it was "borrowed or stolen;" and that disposal of the radium wastes was being held pending receipt of some information from this office.

When this writer's activities on December 13, 1966 prevented his visiting the Sooner Dial Company, Mr. Owens was contacted by local telephone, and the aforementioned subject discussed in somewhat greater detail. During this second conversation, Mr. Owens was informed that the department would forward a reiteration of the items discussed during Mr. Craig's inspection in June of 1965, and during his telephone conversation with this writer.

Specific recommendations and information are included in the correspondence attached for your review and signature.

It is suggested that Mr. Craig review the correspondence to assure that this writer has not confused the problem too much.

JMC:PL
cc Mr. R. L. Craig

Commissioner
A.B.COLYAR, M.D.

State Department of Health

State of Oklahoma

3400 NORTH EASTERN
OKLAHOMA CITY, OKLAHOMA 73105

December 20, 1966

Mr. Charles E. Owens
General Manager
Sooner Dial Company
1002 South 10th Street
Clinton, Oklahoma 73601

Dear Mr. Owens:

This is in reference to the department's recommendations concerning your dial refinishing operation as discussed with Mr. J. M. Conlon of this office in your recent telephone conversation, and with Mr. Robert Craig, also of this office, during the initial evaluation.

To correct several deficiencies and to bring your operation more into line with accepted practices, it was recommended that:

1. You dispose of your stripping waste and paint containers through a commercial disposal firm, rather than dumping in the sanitary landfill as has been done in the past. (A partial list of companies which supply such a service is attached.)

2. You post the entrance to the shop with "Caution - Radiation Area" and "Caution - Radioactive Materials" warning signs or posters.

3. A general program for clean-up and decontamination and complete material control be initiated.

4. Personnel monitoring be initiated for all individuals involved in the paint shop operation.

5. The inhalation and ingestion hazards be thoroughly evaluated.

6. Some provision be made for routine contamination surveillance.

Considering the scope of your operations and the conditions revealed by the initial evaluation, it is again suggested that you consider engaging a consultant to assist you in evaluating the entire

situation and in making particular recommendations for current and long range control.

While the department does not recommend particular individuals or firms or in any way guarantee the services such individuals or firms may perform, it does supply the names of individuals or companies that have provided such services in Oklahoma. A partial list of such companies and individuals is attached.

Should you have any questions, or if we may be of any assistance to you, please let us know.

Very truly yours,

Dale McHard, Head
Occupational and Radiological
Health Section

DM:PL
Attachment
cc Mr. R. L. Craig

Commissioner

A.B.COLYAR, M.D.

State Department of Health

State of Oklahoma

3400 NORTH EASTERN
OKLAHOMA CITY, OKLAHOMA 73105

September 29, 1967

MEMORANDUM

To: File

From: Robert L. Craig

Subject: Sooner Dial Company, Clinton, Oklahoma

On September 11, 1967, I called at the Sooner Dial Company in Clinton, Oklahoma, for the purpose of discussing the cleanup procedures outlined in the inspection report dated June 23, 1965, and a letter dated December 20, 1966. Mr. Harold C. Bay was the only person contacted.

Mr. Bay stated that the use of radium luminous compounds had been discontinued and that requests for dials to be refurbished with radium luminous compound are returned to the customer. It was observed that the shop had been painted and the working surfaces covered with Formica. Mr. Bay said that the bench surfaces had been cleaned and painted before installation of the Formica tops. The original glass bench tops had been disposed of as well as all stock of radium luminous compound. Mr. Bay also stated that old dials suspected of having radium on them are discarded without having the paint stripped.

RLC:PL

Memorandum
January 23, 1985

To: File - January 21, 1985

From: Robert L. Craig, Director RLC
Radiation Protection Division

Subject: Sooner Dial Co. - Clinton Oklahoma

Bob Gallegher, NSSI, called to report that he was working on a project in Texas which involves some silk screens purchased from Sooner Dial Co. in 1969. The screens are contaminated with radium.

RLC:dmm

MEMORANDUM
February 5, 1985

To: Sooner Dial Company File

From: Robert L. Craig, Director
Radiation Protection Division

Subject: Review and Planning Meeting

On February 4, 1985, Bob Kellogg, Wib Truby, Coleman Smith, and I met in Kellogg's office for the purpose of discussing the contamination of this site with radium.

I presented the analysis of the samples taken by Smith & Truby on January 24 and briefed Kellogg on the history of Sooner Dial Company and this site.

We agreed that there are levels of radium contamination that will require action on the part of OSDH but that the data relative to the extent of the contamination are far from complete at this time.

We concluded that a detailed survey and sampling of the site is necessary in order to evaluate the degree of hazard which exists. This survey must include:

1. Swipe samples from the Arcade.

2. Establishment of a grid system on the site for the purpose of correlating sample collection and sample analysis,

3. Using the grid as a base measure the gamma ray intensities and collect samples.

4. Determine if the radium on the site is soluble or insoluble.

I agreed to develop the survey and sampling plans and procedures and, using the samples collected on January 24, determine if the radium is soluble or insoluble.

In addition, we agreed that it was necessary to attempt to elicit the cooperation of the present owner of the property. Truby agreed to develop a plan for doing this.

We will need to locate and survey the site to which any rubble from the site has been taken. Truby will locate the debris, Radiation Protection will survey.

We will need to locate a place for disposition of any low level radioactive waste generated during the decontamination process. Smith will do this.

We will need to estimate the hazard to the general population and to workers involved in the decontamination.

The information requried for these estimates include:

1. The area contaminated.

2. The concentration of radium in the soil.

3. Are there discrete sources of radium present (i.e., buried containers)?

4. Resuspension factors.

5. Solubility of the radium.

6. Literature - citations of hazards (Bier Reports, UNSCEAR, etc)

RLC/mb

cc: Bob Kellogg
Wib Truby
Coleman Smith

MEMORANDUM
February 13, 1985

To: Sooner Dial Company File

From: Robert L. Craig, Director RLC
Radiation Protection Division

Subject: Survey and Sampling

On February 11, 1985 I visited with Mr. Ron Grubbs, the present owner of the site. Mr. Terry Theisson, Custer County Sanitarian, accompanied me.

I told Mr. Grubbs of the results of Smith and Truby's visit to the site on January 24th and delivered Kellogg's letter.

Mr. Grubbs asked me what his legal position in this matter was. I told him that he should consult his attorney.

I told Mr. Grubbs that we needed a more detailed survey of both the vacant lot and the inside of the building. He gave his permission and assured me that he would cooperate in our investigation. He gave me the key to the building. After Mr. Theisson and I finished, I returned the key to Mr. Grubb's secretary and told her that I would write a report and send him a copy.

Theisson and I measured and recorded the gamma ray count rates at 45 locations. Two measurements were made at each location. The first was at about three feet above the ground surface. The second was at the surface of the ground. The measurements were made with the 1" x 1" NaI detector and the Ludlum Model 15 rate meter. The results of the measurements are shown on the attached sketch. The ground surface measurements are shown as the lower of the pair of numbers.

The general background count rate at locations off the site was 1,000 to 2,000 cpm.

Examination of the area near the water meter from which a sample was taken on January 24 (described then as a manhole) revealed a thin layer of hard, greenish-gray material which is very radioactive. The material had small spots or flecks of greenish-yellow material in it. It has the appearance of sludge with luminous paint in it.

In addition to the measurements, samples were taken at three locations on the site. The soil at each sampling location from the surface to 2 inches was marked as sample A, from 2 to 4 inches as sample B, and the soil from 4 inches to 6 inches as sample C. At point 2 the soil depth was only about 4 inches, so only 2 samples were taken there.

In general, the soil depth on the property was about 6 inches. Below this depth was sandstone which appeared to be undisturbed. Some places were very muddy and the soil may be deeper there.

On the concrete apron behind the building were found two localized hot spots, indicating the presence of radioactive material beneath the concrete.

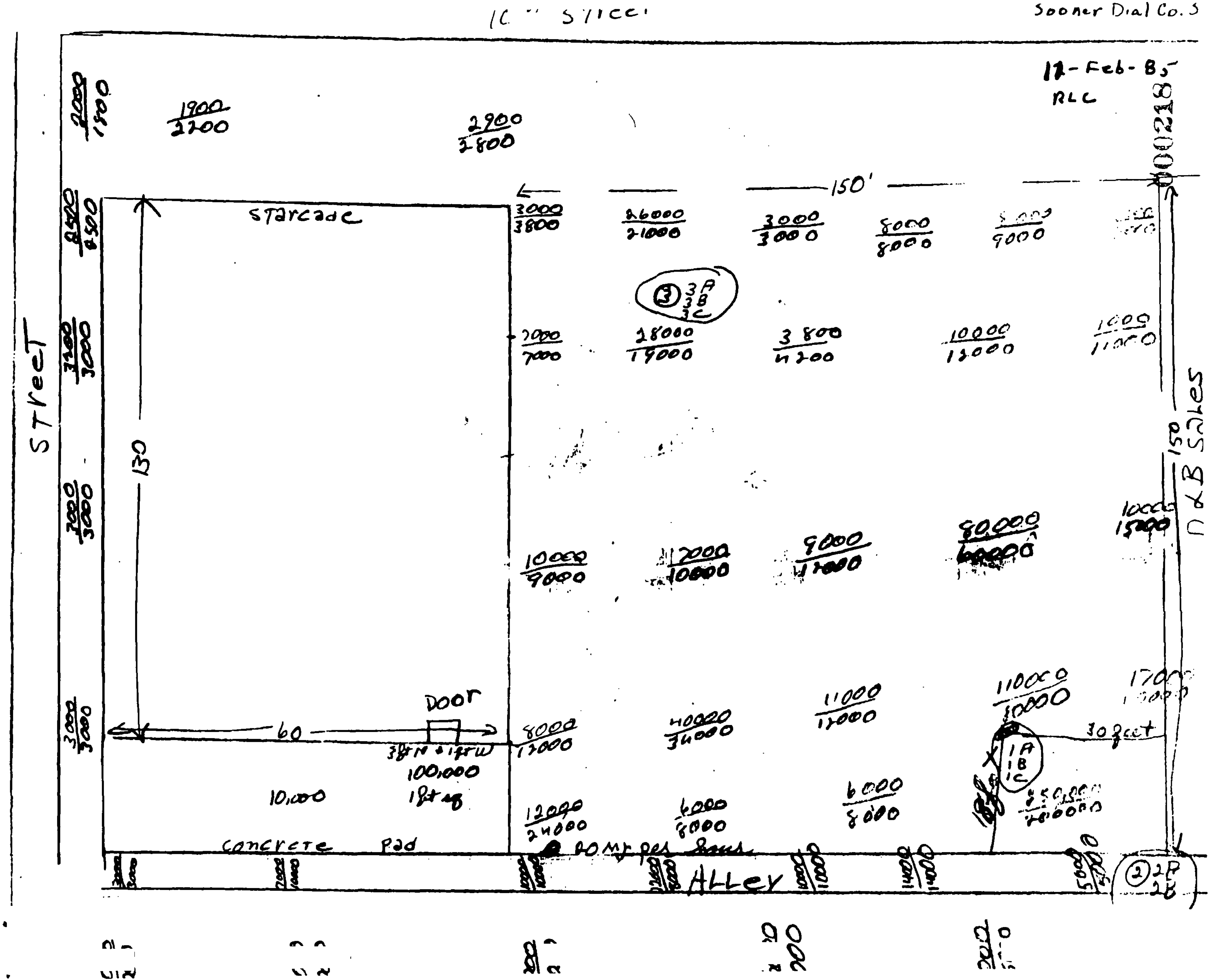
There is a water line in the alley behind the site. At three locations where there are water meters, we found hot spots with count rates up to 250,000 counts per minute.

The inside of the building (which was being used as a warehouse for video games, pool tables, and other things) was surveyed for gamma and alpha radioactivity. Gamma ray levels were about 1,000 cpm. The rear portion of the warehouse had a bare concrete floor. Most of the floor had about 100 to 200 cpm of alpha radiation detectable. One swipe sample of a 100 sq cm area was taken.

The pattern of radioactivity found indicates wide spread contamination from the property across the alley to the street and extending down the alley to the south.

RLC/bh

cc: Bob Kellogg
Dale McHard
Wib Truby
Coleman Smith



Sooner Dial Co. S
10th Street
12-Feb-85
RLC
Street
Starcade
150'
130
60
Door
38ft N + 17ft W
100,000
18ft ag
10,000
Concrete pad
30 feet
Alley
D & B Sales
150
③ 3A 3B 3C
1A 1B 1C
② 2A 2B

MEMORANDUM
March 11, 1985

To: Sooner Dial Company File

From: Robert L. Craig, Director
Radiation Protection Division

RLC noted DWM

Subject: Results of Sampling

On February 11, 1985 samples were collected at the Sooner Dial Company site in Clinton. The results of the analysis of these samples are shown below. The sampling locations are those referenced on the sketch of the property shown in the memo of February 13, 1985:

Locations	Depth Below Ground Surface	Radium (pCi/gm)
1	Surface to 2 inches	2,130
	2 to 4 inches	580
	4 to 6 inches	810
2	Surface to 2 inches	150
	2 to 4 inches	880
3	Surface to 2 inches	130
	2 to 4 inches	210
	4 to 6 inches	200

The swipe sample taken from the floor of the warehouse (Starcade) was analyzed and found to have no radioactivity on it.

RLC/bh

Attachment

cc: Bob Kellogg
Wib Truby
Terry Thiesson

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020001.
COUNTY : 20

SOONER DIAL (NEAR MANHOLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25374.	25-JAN-85	3630.66	741.66	1133.27	
	AVERAGE	3630.66	741.66	1133.27	0.00

020009

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020002.
COUNTY : 20

SOONER DIAL (PRE SURVEY AREA) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25375.	24-JAN-85	2924.76	631.61	1035.49	
	AVERAGE	2924.76	631.61	1035.49	0.00

000221

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020003.
COUNTY : 20

SOONER DIAL 1-A (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25420.	11-FEB-85	3604.31	742.20	2131.85	
	AVERAGE	3604.31	742.20	2131.85	0.00

020022

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020004.
COUNTY : 20

SOONER DIAL 1-B (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25429.	11-FEB-85	973.31	126.04	580.39	
	AVERAGE	973.31	126.01	580.39	0.00

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020005.
COUNTY : 20

SOONER DIAL 1-C (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25430.	11-FEB-85	1343.99	113.45	808.52	
	AVERAGE	1343.99	113.45	808.52	0.00

7020005

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020006.
COUNTY : 20

SOONER DIAL 2-A (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25431.	11-FEB-85	463.17	144.65	151.82	
	AVERAGE	463.17	144.65	151.82	0.00

000225

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020007.
COUNTY : 20

SOONER DIAL 2-8 (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25432.	11-FEB-85	1393.55	254.03	882.46	
	AVERAGE	1393.55	254.03	882.46	0.00

9220080

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020008.
COUNTY : 20

COONER DIAL 3-A (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25433.	11-FEB-85	179.78	24.63	129.22	
	AVERAGE	179.78	24.63	129.22	0.00

7020008

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020009.
COUNTY : 20

SOONER DIAL 3-8 (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25431.	11-FEB-85	307.86	77.01	214.08	
	AVERAGE	307.86	77.01	214.08	0.00

820008

OKLAHOMA STATE DEPARTMENT OF HEALTH
RADIATION PROTECTION DIVISION
RADIOCHEMISTRY LABORATORY

ANALYSIS REPORT

DATE 07-MAR-85

IDENTIFICATION NUMBER : 7020010.
COUNTY : 20

SOONER DIAL 3-C (SOIL SAMPLE) PAGE 1

SAMPLE NUMBER	DATE SAMPLED	GROSS ALPHA (PCI/GM)	GROSS BETA (PCI/GM)	RADIUM (PCI/GM)	URANIUM (PCI/GM)
25435.	11-FEB-85	174.98	41.47	204.96	
	AVERAGE	174.98	41.47	204.96	0.00

Memorandum
March 15, 1985

To: Mark S. Coleman, Deputy Commissioner
for Environmental Health Services

Thru: Dale McHard, Chief
Radiation and Special Hazards Service

From: Robert L. Craig, Director
Radiation Protection Division

Subject: Project Summary, Sooner Dial Company Site, Clinton

On January 24, 1985 a cursory survey of the site was made by Truby and Smith and two samples of soil were taken. Radiation levels were measured but were not recorded. The gamma ray levels ranged from 10,000 cpm on the Ludlum 1 X 1 inch NaI scintillation detector (about 0.01 mr/hr.) to 20 mR/hr as measured with a GM type survey instrument. The concentration of radium in the soil samples was 1130 and 1040 pCi/gm.

On the basis of these results, the owner (Mr. Ron Grubbs) was contacted and informed that there was radium contamination on the property.

On February 11, 1985 a more detailed survey of the property was made by Craig and Thiesson (Custer County Sanitarian). At this time, a grid was established on the property and external gamma ray measurements were made and recorded at ground level and three feet above the ground. The grid was about 30 feet on each side (900 sq. ft. for each grid section). Samples were collected at three locations on the property. Samples were taken at two inch intervals from the ground surface to the underlying sandstone. The warehouse was also surveyed for external radiation levels and for alpha radioactivity contamination.

The gamma ray levels in the warehouse were found to be at background levels (10,000 cpm on the NaI detector).

A swipe sample of the floor of the warehouse indicated that there was no removable alpha contamination. Direct survey of the floor indicated levels of fixed contamination ranging from 1300 to 2600 dpm per 100 square centimeters.

Analysis of the soil samples showed the following results:

Date Sampled	Location*	Depth Below Ground Surface	Radium (pCi/gm)
24 Jan 85	X	Surface	1,130
24 Jan 85	X	Surface	1,140
11 Feb 85	1-A	0 to 2 in.	2,130
	1-B	2 to 4 in.	580
	1-C	4 to 6 in.	810
11 Feb 85	2-A	0 to 2 in.	150
	2-B	2 to 4 in.	880
11 Feb 85	3-A	0 to 2 in.	130
	3-B	2 to 4 in.	210
	3-C	4 to 6 in.	200

*See sketch

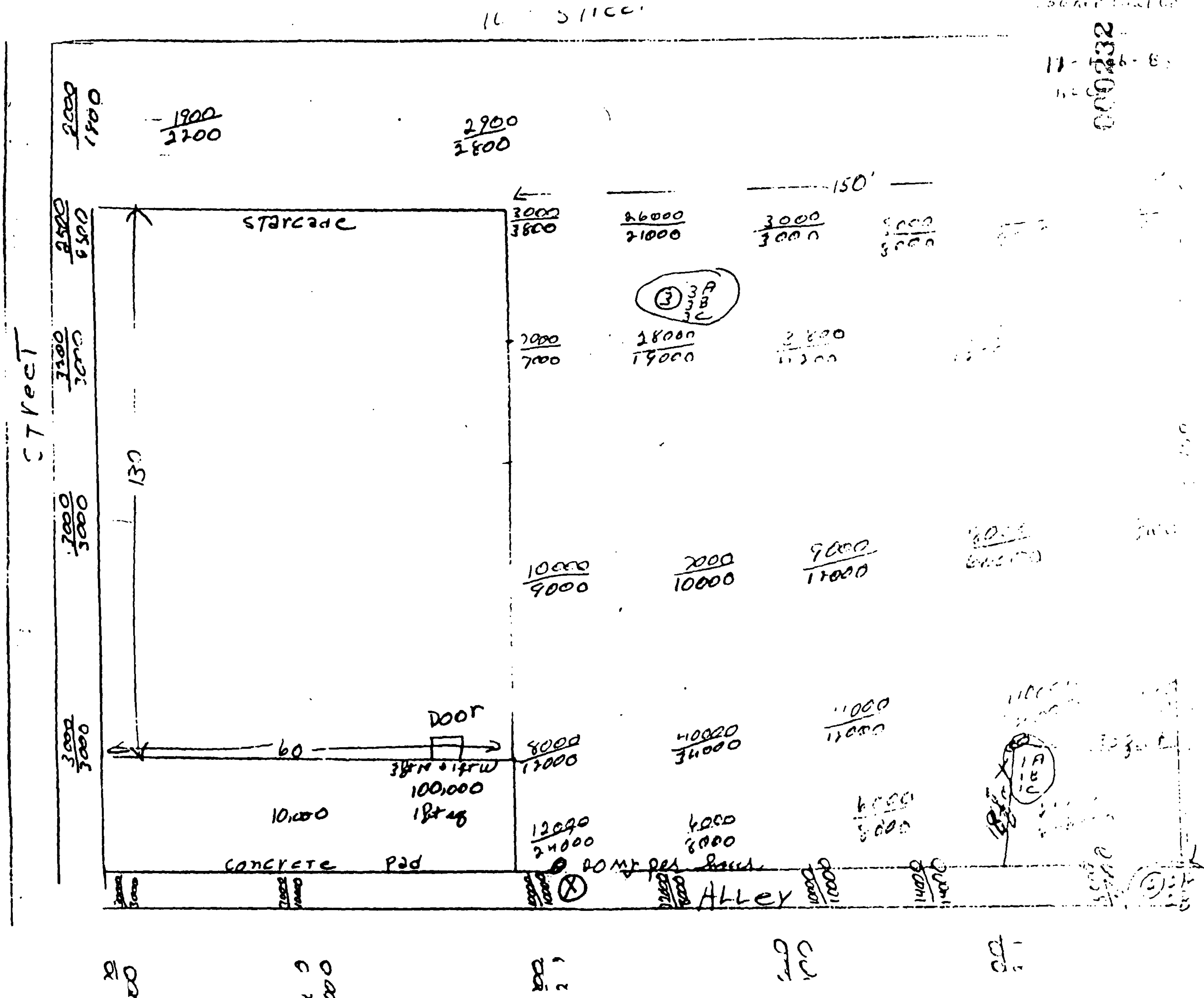
The gamma ray measurements shown on the sketch and the concentrations shown above indicate the presence of widely spread, non-uniform contamination on the site. There are several spots where the external radiation levels indicate high levels of contamination in the soil and two hot spots under the concrete apron at the rear of the warehouse. These are also indications that there may be contamination of the soil across the alley from the site.

Analysis of one of the samples collected on January 24, 1985 indicates that less than 0.5 percent of the radium is soluble.

Some rubble had been removed from the site and hauled to a site inside the city limits of Clinton to be used as construction fill. Thiesson knows the location of this site. The site is owned by Ray Wickert, Inc., 1401 Industrial Road, Clinton, Oklahoma. The site is reported to be 2 or 3 acres in area and the fill is 6 to 8 feet deep.

There is contamination on the floor of the warehouse which is minimal. The levels are in the range which require remedial action.

Present knowledge indicates that there is uncontrolled radium contamination in the soil on the site in concentrations which require removal. A preliminary estimate indicates that the cost of removal may exceed $500,000. There is a good possibility that this cost may be reduced significantly if more detailed survey and analysis information were available. Since the radium is only very slightly soluble, there should not be any significant contamination of either ground or surface water. The degree of hazard to the public from this site is small and while the contamination must be removed, care must be exercised in the design of the remedial action plan.


Street
Starcade
150'
130
60
Door
100,000
10,000
Concrete Pad
Alley
3A
3B
3C
1A
1B
1C

000232

Memorandum
March 18, 1985

TO: Mark S. Coleman, Deputy Commissioner
for Environmental Health Services

THRU: Dale McHard, Chief
Radiation and Special
Hazards Service

FROM: Robert L. Criag, Director
Radiation Protection Division

SUBJECT: Remedial Action Plan for Sooner Dial Co. Site in Clinton

Previous work has established the presence of radioactive contamination of this site in amounts that require remedial action be taken.

The criteria to be considered in preparing a plan of action are:

1. Oklahoma Radiation Protection Regulations.

2. "Soil Contamination Guidance" Conference of Radiation Control Directors.

3. "Proposed Radiological Criteria for Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites", U.S. Department of Energy.

4. "Management of Water Treatment Plant Sludge Containing Elevated Levels of Radium", Illinois Department of Nuclear Safety.

5. "Decommissioning and Decontamination Plan for the Luminous Processes, Inc. Site located in Clarke County Georgia", Georgia Department of Human Resources and Georgia Department of Natural Resources.

Section 13.3 of the Oklahoma Radiation Protection Regulations states "A user may dispose of radioactive waste only in areas and by procedures approved by the Oklahoma State Department of Health." The other mentioned criteria are consistent in requiring that material which has a radium concentration exceeding 5 picocuries of radium per gram be removed and sent to a facility which is licensed to receive and dispose of such material. They are also consistent in requiring that items of equipment and surfaces in buildings which are subject to be used by the public, and to which access is not controlled for purposes of radiation protection, should not have more than 100 disintegrations per minute of fixed alpha

emitting radioactive material per 100 square centimeters of surface area nor more than 20 disintegrations per minute of easily removeable alpha emitting radioactive material per 100 square centimeters of surface area.

The National Council on Radiation Protection recommends that members of the public should not receive more than 500 millirems of radiation exposure per year.

In many places on the site the external gamma ray exposure levels were in excess of the recommended limit, ranging up to 17,500 millirem per year (measured 3 feet above the surface of the ground). This is the exposure that a person continuously present at that spot (24 hours per day and 365 days per year) would receive.

It is highly unlikely that any one would remain at that location for any time period which would result in more than a minimal exposure, nevertheless this represents a potential for exposure which is in excess of a national standard and should be removed.

This site contains radium in the soil which exceeds the concentrations requiring removal before release for public use, the building (Starcade) has fixed alpha radioactivity on the floor, and the area to the south of the Starcade building has external gamma radiation levels which exceed those recommended by NRCP. Because of this, remedial action is required. This action should be taken in several phases as outlined below.

Phase I -

A. Remove and place in barrels the surface and near surface radioactivity near the water meters on the west edge of the site.

B. Store the removed material in a secure, locked and posted area.

C. Install a fence around the contaminated area. The exposure rate at the fence after removal of the surface and near surface radioactivity should be less than 50 microroentgens per hour.

Phase II -

A. Establish a new grid system on the site. The grid system should be referenced to some easily identified point on the site so that it may be used in the future in identifying areas from which soil must be removed. The new grid system should extend from the west side of the alley to Tenth street and from the street on the north side of the site to the D&B Sales building on the south. Provisions should be made for extending the grid system should information be gained indicating that there is radioactivity outside the gridded area.

B. Measure the gamma rays at the surface of the ground at each grid intersection with a 2 in. by 2 in. NaI scillintation detector with a scalar and single channel analyzer. The single channel analyzer should be set to detect gamma rays with energies from 550 keV to 650 keV. The counter should be run for 5 minutes at each point.

C. Using a hand-held 1 in. X 1 in. NaI scintillation detector set to detect gamma rays with energies greater that 50 keV, measure the gamma ray rate at 3 feet above the surface of the ground at each grid intersection.

D. Drive a 1/4 inch steel rod into the ground at each grid intersection and measure the depth of the soil.

Phase III - A. Drill holes at 10% of the grid intersections and take core samples of the soil. The holes in areas where the soil depth is more than 6 inches should be drilled with a Henderson Tube to facilitate separation of the core samples by six increments of depth. The holes should be drilled to the underlying sandstone. Separate the cores into six inch increments and analyze each increment for its radium concentration.

Phase IV — Using the information developed in Phase II and Phase III determine the areas and the depths where the concentration of radium exceeds 5 pCi/gm and calculate the volume of soil to the removed.

Phase V — Select a contractor to remove and ship the contaminated soil to a final disposal site.

Phase VI — Remove the contaminated soil and ship it to the final disposal site. The Radiation Protection Division should act in an oversight capacity during this Phase.

Phase VII — Resurvey the site to ensure that no areas of the site exceed the standards for release for use by the public. This will involve a repetition of the measurements of Phase II.

Phase VIII — Formally release the site.

MEMORANDUM
March 21, 1985

To: Mark S. Coleman, Deputy Commissioner
for Environmental Health Services

From: Dale McHard, Chief
Radiation and Special Hazards Service

Subject: Sooner Dial Company site, Clinton--Additional Investigative Issues

This memo is to present additional issues which should be investigated to the extent necessary to determine any information pertinent to overall program effort in regard to the radium contamination existing at the Sooner Dial Company site. Reference should be made to the memoranda and letters written in connection with this case since February 5, 1985.

1. Sewer/septic tank system--Mr. Thiesson, Custer County Health Department, has been asked to make a preliminary determination whether this site has been served by sewers or septic tank systems since at least 1965. If it is determined that a septic tank system was utilized (particularly during the time radium dial stripping was conducted), additional investigation in this regard will be required.

2. Ownership of the property--A record search of Custer County records should be conducted to determine each and every owner of this property since at least 1965. Written or personal contact with each of the owners so identified may be necessary.

3. Description of property--A legal description of the property, particularly in regard to defining easements and setting forth boundaries, should be obtained.

4. Scale or plat map--If a scale or plat map is readily available in the county records, a copy of such map should be obtained for our use.

5. Water/sewer line--We suspect that a water or sewer line at the back of the property has been constructed or has had repairs recently. The City of Clinton should be requested to give us information in this regard; if it is determined that a crew has been working in this area, it probably will be necessary to interview the contractor or foreman of the crew.

6. Legal opinion--It would be helpful if we could obtain a copy of the court's opinion and the case summary of Johnston vs USA which involved a radium paint stripping operation in Wichita, Kansas.

7. Possible sources to defray clean-up costs--An investigation should be made to determine any connection between Sooner Dial and its owners and Luminous Products, a now-defunct corporation. Safety Light Corporation, Bloomsburg, Pennsylvania is an apparent successor company to Luminous. If investigation reveals a connection between Sooner Dial and Luminous, then there may exist potential liability in regard to clean-up of the site.

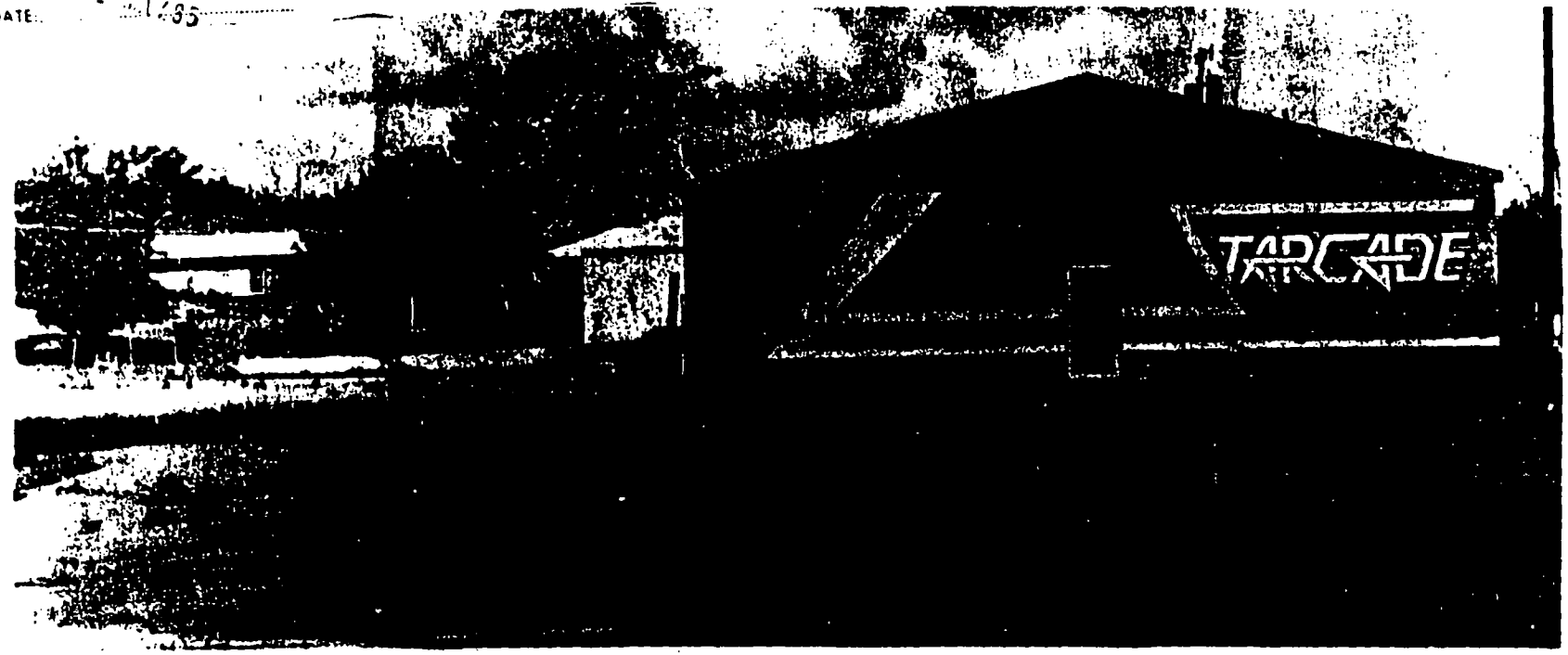
DMC/bh

cc: Bob Kellogg
Wib Truby

Front page

5-14-85

DATE 5/14/85



CONTAMINATED?: The remaining building and adjoining vacant lot at 1002 South 10th street—former location of the Sooner Dial Company—are shown above. Oklahoma Health Department officials say there are "hot spots" of unacceptable levels of radiation on the property, making fencing and clean-up operations necessary to prevent "potential" public health problems. (Staff Photo)

Polluted site isolation set

The former location at 1002 S. 10th Street of the Sooner Dial Company, which ceased operations in 1969, contains areas with unacceptable radiation levels and needs to be isolated, State Health Department officials told city officials Monday.

At a Monday meeting attended by city officials, representatives of the Custer County Health Department and site owner Ron Grubb, Oklahoma State Department of Health representatives Robert L. Craig and Wib Truby called the site a "potential health hazard" but said that "we don't consider it a health hazard to people off the site." But they stressed the fact that it is an area of contamination that needs to be "cleaned up."

They showed the group charts of results of tests their department workers had made at the site which indicated several areas of high concentration of radium—"higher than 'background' levels recognized by federal and state standards."

Mayor Pat Cornell and City Manager James Luckett, who attended the Monday meeting, said today that fencing of the site would begin this week, under the supervision of State Health Department personnel.

The City of Clinton will be "involved" in the matter because health department tests showed that there are areas of high concentration of radium in the alley west of the former Sooner Dial site and from the standpoint of seeing that any "potential health hazards" are eliminated, Luckett said today.

He said he had checked with state public health officials who assured him that no radiation would have penetrated water lines in the area.

"It is limited to the surface soil, perhaps no more and maybe even less than six inches deep," he said.

What the health department officials are recommending is that the surface soil in the "hot spot" areas be removed, sealed in plastic bags and metal barrels and placed in a limited access area until they can be removed to radiation contamination sites in Washington state or North Carolina.

After that topsoil is removed, testing by the State Health Department operatives would continue, and the soil removal process would continue, if necessary, until the site is "clean."

Grubb bought the site in 1969, soon after the Sooner Dial Company ceased operations there.

How the radium entered in various "hot spots" has not been explained, but it is known that the Sooner Dial Company and its predecessors used a mixture of radium and a chemical agent called "phosphor" in the paint they used to refinish aircraft dial instruments to make them glow in the dark.

That firm rebuilt and redialed aircraft instruments removed from surplus U.S. Navy planes brought to Clinton-Sherman Air Force Base for salvage after the close of World War II.

It sold the reconditioned aircraft instruments in many parts of the world.

The 150 by 150-foot site contains a building now used as storage for video games owned by Starcade Amusements and a vacant lot to the south where one of the Sooner Dial Company buildings was razed several years ago.

Truby, who is an environmental specialist with the State Health Department, said today that his department is visualizing a joint effort between the State and County Health Departments, the City of Clinton and the site owner in eliminating the contamination problem. He stated, however, that his department is saying the cleanup is the responsibility of the owner.

As to the damage, Luckett said that health department officials told the group Monday that there is no danger to off-site people or activities, "but if some child wandered onto the site and ate some of the dirt in a radium-concentrated area, it could be a potential health hazard."

He pointed out, however, that Harold Bay of 716 Santa Fe Drive worked at Sooner Dial for many years and even managed it in its final years, "and frequent checkups show that he doesn't have any health problems."

Mayor Cornell said that he believes that "it is the duty of the city to see that any potential danger to the public is eliminated."

He said city officials are considering employment of a veteran health physicist from Oklahoma City to examine the site and advise them on remedial action needed.

How the State Health Department officials became interested in inspecting the former Sooner Dial site is interesting.

Some silk screens used at Sooner Dial to make their repaired instruments luminous again were sold at auction and wound up in or near Houston, Texas. They were discovered to have unacceptable levels of radiation not long ago and reported to the Texas Department of Public Health. Officials there notified the Oklahoma State Department of Health, triggering tests at the former Sooner Dial location.

"There seems to be nothing harmful about this situation except on the site," City Councilman Don Rodolph said today, "but the site needs to be cleaned up as soon as possible."

"That stuff must not be very dangerous, or people like Harold Bay wouldn't be so healthy," Grubb commented today.

MEMORANDUM

June 29, 1990

TO: H. A. Caves, Chief
Consumer Protection Service

FROM: Paul H. Brown, Director
Radiation Protection Division

SUBJECT: Radiation Survey of Sooner Dial

On April 24, 1990, Gary Ammon and I traveled to Clinton for the purpose of conducting a radiation survey of the building, land, and rubble which was associated with the Sooner Dial Facility. The present land owner, Ron Grubb, was contacted (405-323-6400), and we received his permission to survey the site. We were also assisted by our local sanitarian, Terry Thiesson.

Areas surveyed were the original site, which consists of a vacant lot and auto shop located at 1000-1004 10th Street, the adjacent alley, and surrounding property (see attached map). In addition, building rubble had been removed and transported to a dumping area approximately two (2) miles southeast of the site. This dump area is an isolated field in which fill material had been requested. No further development of this area is now planned.

A radiation survey was performed at all locations utilizing a Ludlum Micro-R Meter. Gamma readings in excess of 50 micro-R per hour (approximately 7 to 8 times background) were noted and those areas delineated on the map. In addition, soil samples were taken for further analysis. Sample numbers and locations are also noted on the accompanying map.

Procedure for Analyzing Soil Samples

The radium-226 in soil samples were analyzed by Mark Kurklin of the radiochemistry laboratory in June 1990. They were first air dried and then crushed to a granular consistency. (They were not ground with a mortar and pestle.) Each sample was mixed well and a 25 gram aliquot of the soil was weighed into a plastic bottle that was used as the configuration for calibration. A known radium-226 standard was prepared using 25 grams of low background soil in the same plastic bottle configuration.

A gamma spectrum of each sample, the standard, and a blank was collected for 30 minutes on a Canberra Series 90 Multichannel Analyzer. The area under the radium-226, 186.1 KeV energy peak was determined using the gamma spectrum analysis computer software provided by Canberra Industries. The radioactivity due to radium-226 in each of the samples was calculated as proportional to the number of counts under the 186.1 KeV energy peak of the known standard. There was no apparent interference from uranium-235 which has a gamma peak at 185.7 KeV.

Regulatory Limits

Section 14, Table 3, Column 2 of the Oklahoma Radiation Protection Regulations indicates a release limit for insoluble Ra-226 in water as 3×10^{-5} microCuries/ml (30 pico Curie/ml). No specific table exists for soil contamination. However, it is an acceptable practice to convert this table to soil contamination limits by substituting the pCi/ml to pCi/gram. Therefore, the soil contamination limit should be 30 pCi/gram. (Further rationale to support this assumption can be obtained from Dale McHard).

The survey results and observations for each locale follow:

Dump Site

Again, this is a very isolated area containing numerous piles of building rubble. Gamma surveys were conducted, and three areas with elevated readings were staked, and soil samples collected. The results follow:

Area	Gamma Reading	Soil Depth	Activity/gram
1	350 Micro R/hr	0 - 6 In	385 pCi
2	250 Micro R/hr	0 - 6 In	18 pCi
3	200 Micro R/hr	0 - 6 In	226 pCi

This area does contain building rubble with residual radium in concentrations of concern. Due to its isolated location, at this time I would not recommend any removal. However, the area must be observed for any future development plans.

Auto Shop

Gamma surveys indicated three areas on the floor with measurable readings. However, these areas had been painted and marked. Swipe tests indicated no removal contamination. I consider the floor to be acceptable and no further remedial action is needed.

Vacant Lot

A building formerly located at the rear of the auto body shop had been removed in late 1984, and the rubble transported to the dump area previously mentioned. There appears to be concrete in areas of the lot 4 - 6 inches below the surface. The following sample locations (noted on the map) and readings are associated with this lot and the adjacent areas:

Sample Location	Gamma Reading	Soil Depth	Activity/Gram
4	1000 Micro R	0 - 6 In	571
5	1000 Micro R	6 - 12 In	1003
6	50 Micro R	0 - 4 In	83
7	50 Micro R	0 - 6 In	71
8	50 Micro R	6 - 12 In	1002
9	50 Micro R	0 - 6 In	176
10	50 Micro R	6 - 12 In	102
11	100 Micro R	0 - 6 In	121
12	100 Micro R	0 - 6 In	31
13	250 Micro R	0 - 6 In	412

Samples 7 and 8 were taken on property, uphill from the site. I would speculate that this area contains fill dirt, which was removed from the original site.

Observations

It is evident from this and previous surveys that there is radium contamination present on the site at levels which may require removal. This information was conveyed to Mr. Grubb, who I visited with as the survey was being completed.

Of particular concern is that the access to the vacant lot is unrestricted. A $75 fence was placed around the lot in 1985, but removed shortly after to allow for mowing.

The fact that there is soil contamination off-site on will also be of concern.

Recommendations

A thorough site characterization study is needed which is beyond our capabilities. This is something that should be requested of Mr. Grubb.

We should rely on Terry Thiesson of the Custer County Health Department to monitor the area and report any changes. We also need to keep him fully informed.

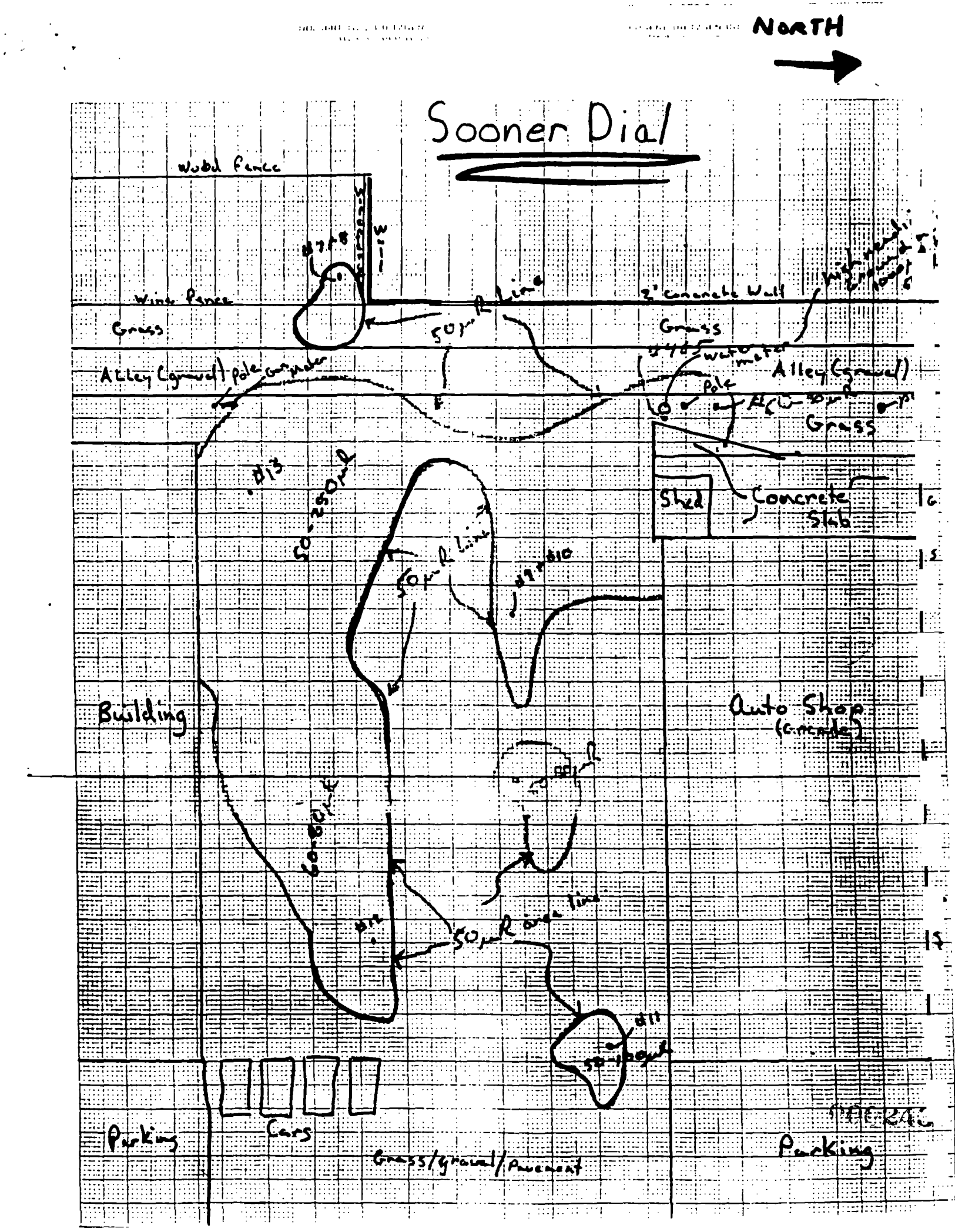
The contamination area located on adjacent property will be of concern. I have no suggestions for its remediation.

Finally, we must begin to reach some agreement within the agency as to what our policies and protocols should be for management and clean-up of this site.

PHB/mj

Attachment 1

cc: Sooner Dial File


NORTH
Sooner Dial
Wood Fence
Wire Fence
Grass
Alley (Gravel)
pole
50' ft line
2' Concrete Wall
Grass
Alley (Gravel)
Grass
Shed
Concrete Slab
#13
50-250 yd
#9
#10
Building
Auto Shop
(Grade)
50-80 yd
#12
50 yd Range line
#11
50-100 yd
Parking
Cars
Grass/gravel/Pavement
Parking

Put in Sooner Dial file

OKLAHOMA PRESS
CLIPPING BUREAU
Oklahoma City, Oklahoma

Daily News
Clinton, OK
Circ. 5,251

front page

5-18-85

DATE: 5/18/85

Dial site now fenced

103

After learning at a Monday meeting with State Health Department officials that the area where Sooner Dial Company had been located contained some spots where radiation levels were unacceptable, Clinton City Manager James Luckett ordered the site at 1002 South 10th Street fenced off.

City workers put up a wire fence around the area Tuesday and barricaded the alley west of the former building where some areas of high radiation concentration had been found.

Luckett said that while the city picked up the tab on the fencing, the bill was under $75.

Currently, the city manager is researching the situation and visiting with health physicists "to study the rules and learn what we can do."

A city health physicist has not yet been hired, but Luckett said the city's plans were to locate one as soon as possible.

Since State Health Department officials told him that while the site was a "potential health hazard" it wasn't considered a danger to persons off the site. Luckett said the purpose of the fence and barricade was to keep people from walking across the area.

Sooner Dial ceased operations in 1969. The sale of some silk screens used by the firm triggered the investigation when the screens were discovered to contain unacceptable levels of radiation. The screens wound up in or near Houston, Texas and the radiation levels were reported to Texas Department of Public Health who passed the information on to the Oklahoma State Department of Health, triggering the tests at the former Sooner Dial location.

City officials agree that only the site of the former company is involved and that "hot spots" are limited to the surface soil.

MEMORANDUM
July 3, 1985

TO: Mark S. Coleman, Deputy Commission
for Environmental Health Services

THRU: Dale McHard, Chief
Radiation and Special Hazards Service

FROM: Robert L. Craig, Director RLC
Radiation Protection Division

SUBJECT: Old Sooner Dial Company Site in Clinton

On July 1, 1985 I met with Mr. James Luckett, Clinton City Manager, and Terry Thiesson, Custer County Sanitarian. We visited the site where I discussed the need for a Hi-Vol air sampler and the fact that none of the high activity soil had been removed.

Mr. Luckett said that he would have a 120 volt electrical service installed on a power pole of the northwest corner of the site. Mr. Thiesson said that when the sampler was installed he would service it and send the samples to our laboratory.

Mr. Luckett said that the Clinton city attorney has said that the alley does not belong to the city and that, even though the city has an easement to place utilities there, the property owner is responsible for the removal of the radium.

While I was in Clinton I made a preliminary survey of the Kist Photo Shop for radioactive contamination. The building is owned by:

J. H. Robertson, Jr.
2637 N.W. 26
Oklahoma City, OK 73107
Telephone: (405) 943-3055

The building is rented by:

Robert Conn
218 West First Street
Cherryvale, KS 67335
Telephone: (316) 336-2496

This is a location where it had been reported that some silk screening of aircraft instruments had been done after Sooner Dial Company went out of business.

The establishment appeared to have been painted and had new furniture and equipment installed within the past few years. Measurements of the alpha radioactivity on surfaces revealed no contamination on any relatively new surface. There was alpha radioactivity on the tile floor beneath the carpet, up to 96,000 dpm per 100 square centimeters. A wipe sample of the area indicated removable contamination of about 10 dpm per 100 square centimeters. This contamination exceeds the guidelines for release in buildings for use by the general public.

cc: Wib Truby